## REMARKS

### Formalities

The current Office Action is in response to Applicant's Brief on Appeal, filed April 8,

2005. In the Office Action, the Examiner indicates that he has reopened prosecution.

Claims 1-69, as appealed, are all the claims currently pending.

### Request for Examiner Interview

Applicants note that a Request for Interview is being filed concurrently herewith.

Applicants respectfully request a personal interview with Examiner Azarian concerning the

below-discussed issues and the patentability of the pending claims.

### Examiner's Response to Applicant's Arguments

At pages 2-4 of the Office Action, the Examiner attempts to respond to the arguments

presented in Applicant's Brief on Appeal.

Claim 1 and "recording history data on past inter-image operations" Regarding the

argument, presented at page 13 of the Appeal Brief, that Kano fails to teach "recording history

data on past inter-image operations, the Examiner has provided a perplexing response.

First, the Examiner appears to misconstrue the phrase "history data on past inter-image

operations." It appears that Examiner's previous arguments regarding this limitation indicated

that he understood that the term *on* is used to mean *related to*, as in *history data related to past

inter-image operations*. (This is clearly explained in the specification.) However, in the current

Office Action, the Examiner appears to misconstrue the above phrase to refer to data literally

2

recorded *on top of* an image. In this vein, the Examiner asserts that Kano discloses "'locations of

the detected possible interval changes' (history data) can be indicated using notations such as

arrows superimposed (recorded) 'on' the subtraction image (processed image) or the original

image(s) (base image(s))...." Here, the Examiner appears to assert that a disclosure in Kano

teaching the use of markers such as arrows to highlight a specific region of an image anticipates

the claimed limitation of "recording history data on past inter-image operations."

Second, the Examiner refers to a series of teachings of Kano which do not teach or

suggest the "recording history data on past inter-image operations" limitation and fails to explain

their relevance. Further, some recitations are not, as they purport to be, quotes from Kano, and

do not directly match with the citations which he provides. For example, the Examiner notes the

following teachings in Kano:

●the Examiner quotes "'providing changes between a pair of temporally sequential

medical images and detecting abnormal regions where the two images are matched with each

other'" (not actually a direct quote from the cited col. 2, lines 29-49);

●the Examiner asserts that "Fig. 15A, 15B, and 16A, 16B, pair of same images for a

particular patient where the earlier image was taken two years earlier, and difference image

(subtraction) is shown, which the existence of various artifacts in this figure is prominent due to

the mismatch of the anatomical features, also Fig. 16A shows the difference in amount of

cardiomegaly, same image (identical), taken two years earlier (recording history), (column 13,

lines 21-46), also providing changes between a pair of temporally sequential medical images and

detecting abnormal regions where the two images are matched with each other (column 2, lines 29-49); and

•the Examiner notes that "Kano discloses Fig. 11A, the local matching is performed and generate outputs result to memory 170, then a curve fitting calculator receives the output of memory 170 and performs the curve fitting function described above, and result stored in memory 190 which then outputs to memory 200 (recording on past inter-image) , then performed the subtraction calculator device...."

Finally, regarding claim 1, the Examiner appears to contradict his own assertions and admits that Kano "does not explicitly state, 'recording history data on past inter-image operations.'" The Examiner then asserts that the Hiyama reference, discussed below, has been provided to make up for this failure.

<u>Claim 64 and "displaying information identifying two or more base images ... together with the processed image"</u> Regarding the argument, presented at page 18 of the Appeal Brief, that Kano fails to teach "displaying information identifying two or more base images ... together with the processed image," the Examiner <u>again</u> merely restates his previous argument (which has been rebutted by the Applicant in the Appeal Brief and in responses to earlier Office Actions) without providing any response to Applicant's rebuttal.

**Current Claim Rejections**

In the current Office Action, the Examiner references Kano (U.S. Patent No. 5,359,513) and a newly-cited reference: Hiyama et al., U.S. Patent No. 5,379,757 ("Hiyama"). Currently, all

of claims 1-69 stand rejected under 35 U.S.C. § 103(a) as allegedly unpatentable over Kano, in

view of Hiyama.

**Claims 1 and 32.** As noted above, the Examiner admits that Kano fails to disclose

"recording history data on past inter-image operations," as claimed, and asserts that Hiyama

teaches this limitation.

Hiyama is generally directed to a method and apparatus for compressing images from an

endoscope (Abstract). The apparatus is capable of compressing the image data at different rates

depending on different features of the image, such as whether it is a dyed image (Abstract).

Regarding the limitation of "recording history data on past inter-image operations," the

Examiner refers to col. 68, ln. 64 to col. 69, ln. 5 (including description of the apparatus of the

32nd embodiment) and col. 75, ln. 64 to col. 76, ln. 8 (including description of the operation of

the 32nd embodiment). The 32nd embodiment is illustrated in Figs. 89-94. The first portion

referred to by the Examiner (col. 68, ln. 64 to col. 69, ln. 5) describes that patient data, such as

the name and date of birth of a patient, can be input through a data input part such as a keyboard,

and can be superimposed on the RGB video signals by the image processing part, such that a

viewer may view the patient data over the image from the endoscope. The second portion

referred to by the Examiner (col. 75, ln. 64 to col. 76, ln. 8) describes that a displayed image can

be transmitted and stored in memory.

However, Hiyama fails to teach any inter-image operations, and thus, like Kano (as set

forth in the Brief on Appeal) fails to teach or suggest recording any data on past inter-image

5

operations. The data to which the Examiner appears to refer is current data on a patient relating

to a current image. There are no inter-image operations and therefore Hiyama could not have

suggested recording data on past inter-image operations to one of skill in the art.

Therefore, in view of at least the above, Applicants submit that claims 1 and 32 are

patentable over the cited combination of references and respectfully request that the rejection

thereof be reconsidered and withdrawn.

**Claims 2-31, 33-62 and 65-69.** In view of the above, and in view of the arguments

presented in the Brief on Appeal relating to Kano, Applicants submit that claims 2-62 and 65-69

are patentable at least by virtue of their dependence on claims 1 and 32.

Further, regarding the additional arguments presented in the Brief on Appeal for claims

3-5, 7-9, 11-13, 15-17, 19-21, 23-24, 34-36, 38-40, 42-44, 46-48, 50-52, and 54-55, the

Examiner has failed to respond to these arguments, and, in view of the above, Hiyama fails to

compensate for the failings of Kano.

Specifically, regarding claims 3, 4, 7, 8, 11, 12, 15, 16, 19, 20, 23, 24, 34, 35, 38, 39, 42,

43, 46, 47, 50, 51, 54, and 55, the cited references fail to teach or suggest "wherein the history

data on the past inter-image operations are attached to the processed image data obtained through

the inter-image operation," as claimed. With respect to claims 4, 8, 12, 16, 20, 24, 35, 39, 43, 47,

51, and 55, the references fail to teach or suggest "wherein the history data on the past inter-

image operations are attached to each of said two or more sets of the base image data used for

calculating the processed image data," as claimed. In the current Office Action, the Examiner

refers to col. 4, lns. 57-68 ("a pair of first and second images (step 10, 20), image registration

and then subtraction") and col. 5, lns. 34-47 as disclosing these limitations.

Contrary to the assertion of the Examiner, however, and as discussed above with respect

to claims 1 and 32, all words in a claim must be considered in judging the patentability of that

claims. At most, the cited portions of Kano describe digitizing a pair of images, registering the

images, mapping shift values, and subtracting the images. As discussed above with respect to

claims 1 and 32, Kano fails to disclose or suggest recording history data on past inter-image

operations.

Regarding claims 5 and 36, the cited references fail to teach or suggest "wherein the

history data on past inter-image operations include information identifying the base images each

represented by one of said two or more sets of the base images data used for calculating the

processed image data," as claimed. Applicants note that col. 5, lns. 1-22, referred to by the

Examiner discloses digitizing images, selecting ROIs, image registration, non-linear warping,

subtraction, and viewing by a radiologist. However, neither this section, nor any other section of

Kano discloses or suggests history data including information identifying base images, as

claimed. Further, the "notations such as arrows superimposed (recorded) 'on' the subtraction

image (processed image) or the original image" referred to by the Examiner with respect to

claims 1 and 32 fail to include any information identifying base images, as claimed.

Regarding claims 9, 17, 40, and 48, the cited references fail to teach or suggest "wherein

the history data on past inter-image operations include such data indicating whether or not the

processed image data on certain processed images have already been obtained," as claimed. Col. 5, lns. 24-33 and col. 8, lns. 59-66, referred to by the Examiner, disclose "matching between each corresponding pair of ROIs and comparing the result," and that "best match location are selected to perform a fine search for local matching in the second step for accuracy." However, neither of these sections of Kano, nor any other section of Kano or Hiyama, including the "notations such as arrows" referred to by the Examiner, disclose or suggest any history data including whether or not processed image data has already been obtained.

Regarding claims 13, 21, 44, and 52, the cited references fail to teach or suggest history data on past inter-image operations including information on recording sites of the processed inter-image data and fetching the processed inter-image data, instead of conducting the inter-image operation anew, if it is found by referring to the history data that the desired set of processed image data has already been obtained, as claimed. Additionally, the "notations such as arrows" referred to by the Examiner with respect to claims 1 and 32 fail to teach or suggest history data including information on recording sites of the processed inter-image data.

Regarding claims 2, 6, 10, 14, 18, 22, 25-31, 33, 37, 41, 45, 49, 53, 56-62, and 66, which were previously rejected under §103(a) over Kano and Lemelson, we note that the Examiner appears to have removed Lemelson as a reference, but has not indicated or asserted that Hiyama teaches or suggests that which Kano admittedly does not: "the past inter-image operations are recorded in a designated recording medium" (see Final Office Action of August 11, 2004, page 8). However, Applicants note that Hiyama describes a specific image memory 854 (see col. 70,

lns. 1-9) which the Examiner may consider to obviate the claimed "designated recording medium."

Therefore, in view of at least the above, Applicants submit that claims 2-31, 33-62 and 65-69 are patentable over the cited combination of references and respectfully request that the rejection thereof be reconsidered and withdrawn.

**Claims 63 and 64.** Regarding these claims, as noted above, the Examiner has failed to show that Kano teaches or suggests "displaying information identifying two or more base images … together with the processed image," as claimed. Further, as noted above, Hiyama fails to teach or suggest performing any inter-image processing. Therefore, Hiyama fails to teach or suggest two or more base images displayed with a processed image. The only processed images described in Hiyama appear to be dyed images and compressed images, and therefore are not the result of more than one base image.

Therefore, in view of at least the above, Applicants submit that claims 63 and 64 are patentable over the cited combination of references and respectfully request that the rejection thereof be reconsidered and withdrawn.

**Conclusion**

In view of the above, reconsideration and allowance of this application are now believed to be in order, and such actions are hereby solicited. If any points remain in issue which the Examiner feels may be best resolved through a personal or telephone interview, the Examiner is kindly requested to contact the undersigned attorney at the telephone number listed below.

The USPTO is directed and authorized to charge all required fees, except for the Issue

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Respectfully submitted,
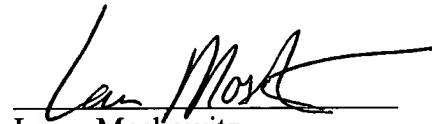
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